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ABSTRACT

An electronic portfolio is a collection of work captured by electronic means that serves as an exhibit of individual efforts, progress, and achievements in one or more areas. Due to rapid growth and updates in technology, keeping electronic portfolios is becoming increasingly common in a variety of educational settings. In fall 2002 at one large public university, 24 field-based preservice teachers designed professional portfolios using either an electronic format or a traditional three-ring binder format. On a ten-point rubric scale, preservice teachers received a mean score of 9.61 and 9.48, respectively, on their electronic or traditional portfolio presentation, indicating little difference as determined by principals and university professors. Through interviews, however, it was determined that the value of video clips included in the electronic portfolios proved to be valuable to administrators in determining teacher candidate effectiveness. (Contains 20 references.) (Author/SM)

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Electronic Portfolios

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Electronic Teaching Portfolios: Technology Skills + Portfolio Development = Powerful Preservice Teachers

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Abstract

An electronic portfolio is a "collection of work captured by electronic means, that serves as an exhibit of individual efforts, progress, and achievements in one or more areas" (Weidmer, 1998). Due to the rapid growth and updates in technology, keeping electronic portfolios is becoming increasingly common in a variety of educational settings. In Fall 2002 at one large public university, 24 field-based pre-service teachers designed professional portfolios using either an electronic format (n = 11) or a traditional three-ring binder format (n = 13). On a ten-point rubric scale, preservice teachers received a mean score of 9.61 and 9.48 respectively on their electronic or traditional portfolio presentation indicating little difference (.13) as determined by principals and university professors. Through interviews, however, it was determined that the value of videos clips included in the electronic portfolios proved to be valuable to administrators in determining teacher candidate effectiveness.

Electronic Teaching Portfolios:

Technology Skills + Portfolio Development = Powerful Preservice Teachers

Teacher reflection has been found to be an intrapersonal experience leading to insight about oneself and one's existing perceptions. The development of preservice teacher portfolios, based on certain standards, captures the richness and complexities of the preservice teacher's teaching and learning while documenting field experiences (Freiberg, 1995; Tabachnick & Zeichner, 1991). Preservice portfolios have been found to be reflective in nature (Tierney, 1994) and also to encourage teachers to engage in critical reflection of their own teaching (Wolf, 1992).

Shulman (1998) defines a teaching portfolio as a " . . . structured, documentary history of a set of coached or mentored acts of teaching, substantiated by samples of student portfolios, and fully realized only through reflective writing, deliberation, and conversation" (p. 37). Electronic or digital portfolios are a "collection of work captured by electronic means, that serves as an exhibit of individual efforts, progress, and achievements in one or more areas" (Weidmer, 1998, p. 586). Portfolios, electronic or not, are used to assess growth over time (authentic assessment) and feature development of skills and abilities (performance assessment). Comparing electronic and traditional portfolios, Kovalchick, Milman and Elizabeth (1998) found them similar, with the exception of the medium. The flexibility to organize a portfolio through hypermedia programs that incorporate spreadsheets, software, homepages, databases on the internet enable electronic portfolios to be accessible in a searchable form (Bull, Montgomery, Overton, & Kimball, 1999).

Some advantages highlighted by Tuttle (1997) for student electronic portfolios that are certainly transferable to teacher electronic portfolios are that users can record digitized video highlighting certain standards. Multiple sections of the electronic portfolios can be interconnected through hyperlinks. McKinney (1998) found the creation of electronic portfolios to be both useful and positive for preservice teachers. Another value is that the creator is able to use various media formats to communicate to a variety of audiences (Corbett-Perez & Dorman, 1999). Additional benefits of creating electronic portfolios are that they offer a variety of ways to exhibit particular talents and abilities, reduce paperwork, condense collections of artifacts, and allow preservice teachers to view and listen to their own growth through captured audio and video clips (Weidmer, 1998). "Imagine the ability to connect any material . . . to any other . . . by simply clicking a button on the screen . . . all of the materials in your three-ring binders, file boxes, and accordion files efficiently organized on a single CD-ROM" (Powers, Thomson, & Buckner, 2001, p.123). According to Weidmer (1998) teachers who compiled their own electronic portfolios grew in "self-confidence, increased collegiality and had an overall improved sense of personal empowerment" (p. 587).

Compilation of portfolios during preservice field experiences is becoming common practice (Bird, 1990; James & Cleaf, 1990; King, 1990; Wolf, 1991). Preservice teachers are seeing this process as a positive learning experience during their methods semesters rather than as another meaningless assignment (Bartlett, 2001). Because students see this process as valid, it mitigates one of the biggest problems facing educators; how to meaningfully incorporate technology into an already demanding curriculum (Richards, 1998). The National Council for Accreditation of Teacher Education (NCATE) has challenged teacher

education programs to incorporate technology into their entire program. This technology should not be "pursued as an end in itself but as a vehicle and medium for teaching and learning" (Bryde, Mahler, Murray-Ward, Gathercoal, & Bartell, 2001, p. 3). On a positive note, due to the rapid growth and updates in technology, keeping electronic portfolios has become increasingly common in a variety of educational settings (Thomas, Lamson, & King, 2001).

The ultimate intended uses of portfolios are threefold, according to Wolf (1999); to provide teachers with an opportunity to reflect on their own learning, to evaluate teacher performance based on standards, and to provide future employers with a comprehensive picture of a teacher's capabilities. This study mainly focused on preservice teacher's accomplishments toward standards and how prospective administrators viewed these accomplishments as a tool for determining future hiring practices.

Statement of the Problem

Do preservice teachers who present their methods-block semester portfolios in electronic format score higher on a rubric assessing their teacher preparedness on INTASC standards as evaluated by principals of their field-based schools and methods block professors, than do their classmates who present a traditional binder portfolio? This study addressed the research priority of analyzing school-site administrators' and university faculties' perception of teacher preparedness.

Methodology

Prior to this study, faculty members at this particular state university were not using electronic portfolios as a means of evaluating pre-service teachers and were using technology in an erratic pattern based mainly upon their individual inclinations. This system

of electronic portfolios, *i-folios*, was developed to create a consistent practice of having preservice teachers create electronic portfolios. Faculty in the College of Education, working with the technology department, developed student modules and templates for electronic portfolios enabling methods block professors to comprehensively utilize the system. This *i-folio* system enabled professors to create their own template for the format of the portfolio based and linked to the ten INTASC (Interstate New Teacher Assessment and Support Consortium) Standards as well as state standards (Bryde, Mahler, Murray-Ward, Gathercoal, & Bartell, 2001). Without standards, a portfolio is " just a . . . fancy electronic resume . . . a collection, haphazard without structure . . .noise, glitz, and hype (Barrett, 2001, p. 2). Students (n = 11) developed their standards-based individualized portfolios using an electronic format. These field-based integrated methods students constructed a personal, dynamic, non-linear electronic portfolio that included text, audio, graphics, digitized photos, video, and html. All students (n = 24) included reflective narratives to match each artifact, explaining why the artifact was selected to represent the standard and how the artifact showed mastery of the standard.

Pre-service students (n = 24) in the Fall 2002 semester of their senior methods block were field-based at one of three school-sites. Approximately half of the sample (n = 11) placed at each site signed up to design their portfolio using *i-folios* and the other half (n = 13) created traditional three-ring binder portfolios, Student presentations of portfolios were rated by three university professors and one of the three school-site principals on a ten-point rubric scale. Principals were then administered a ten-point, likert-type survey and interviewed to determine their attitudes concerning the use of both electronic and traditional portfolios. The interviews were recorded and transcribed.

During the semester, a technology graduate student under the direction of the researcher trained *i-folio* students in the use of a variety of types of hardware (scanners, digital cameras, video equipment, and computers) and software (image manipulation programs, video editing, compression utilities, and multimedia authoring). Students either videotaped each other using a digital video camera or scheduled the graduate student to come to their classrooms to videotape. Both groups of pre-service teachers attended seminars on portfolio preparation and presentation. Another methods professor and a professor from the English Department assisted in these seminar presentations. The i-folio participants were given release time from their field-based classes to visit the university's interactive classroom to scan and download videos and pictures. An additional special session was scheduled for students to edit video and upload to their individual websites. In addition to posting their portfolios on websites, students also burned their portfolio to a CD for ease of presentation when an Internet connection was not available.

Electronic and traditional portfolios were officially reviewed at the end of the semester as each student was assessed during a 10-minute portfolio presentation. The session consisted of eight minutes of oral presentation, followed by two minutes of questioning. This assessment at the conclusion of methods block was used as a tool for reflection and for overall evaluation of knowledge and skills acquired by the field-based students. The electronic portfolios were shared via computers on a burned CD and LCD projectors as students verbalized their rationales for including the various artifacts. Preservice teachers shared the three-ring binder traditional portfolios by flipping pages as they justified their choices of artifacts to verify mastery of the INTASC Standards. Students using both portfolio formats provided a record of the developmental progress made during

field-based experiences in schools and methods block. The administrators of each of the respective schools (n = 3) evaluated the portfolios in conjunction with several methods block professors to assess the presentations using a university-designed rubric. The holistic rubric scores and written comments of the principals and professors were studied to determine the perceptions of these groups. The principal researcher and one other methods instructor orally interviewed the principals to further determine their perceptions of teacher preparedness as well as their overall perceptions of portfolios in general. The ultimate purpose was to determine which pre-service teachers the principals and university faculty perceived as best prepared to be hired as new teachers based on the pre-service teachers' portfolio presentations.

Results and Conclusions

On a ten-point rubric scale, preservice teachers received a mean score of 9.61 and 9.48 respectively on their electronic or traditional portfolio presentation. These averages indicate there was little difference in the way university professors and school principals viewed the portfolios in general. Administrators in public schools have generally not required a portfolio during interviews or have been known to take a very cursory look at the large binders that the students currently prepare. The purpose of the study was to determine if their perceptions of an electronic portfolio would be more or less favorable. In looking at the only the principal's rubrics, students presenting an electronic portfolio received a mean score of 9.2 while those presenting a traditional portfolio received a mean score of 9.1.

After evaluating the preservice teachers on their portfolio presentations, the likert-type survey revealed that principals were only moderately sure that portfolios (electronic or traditional) are a reliable means of depicting the characteristics of an effective teacher.

These three principals felt extremely comfortable using a computer and the Internet and indicated that they would be extremely likely to access an on-line portfolio of a future teaching candidate. Two of the principals would review the electronic portfolio on-line before the interview as a way to "narrow the candidate." When asked if they were making a hiring decision today, which type of portfolio would they most likely use to make that decision, two administrators indicated "electronic" and one chose "neither."

During interviews the researchers attempted to determine if the power of technology empowered administrators to believe that the technology would improve their potential to select the best teacher candidate for their school setting. Principals indicated during our interviews that they had a limited amount of time to review portfolios in their busy schedules. One principal emphasized that, "I'd rather see a product of the lesson rather than the lesson plan itself . . . I liked being able to see samples of outcomes of lessons rather that just a collection of lesson plans" (December 9, 2002, personal interview).

Principals were concerned that when they are in the hiring mode and interviewees are in the 'get-a-job' mode it is difficult to discern those who have excellent interview skills but poor teaching skills from those who have unpolished interview skills but excellent teaching skills. The videos that are included in the i-folios allowed the principal to "make informed decision without solely relying on the interview." The major difference "for me between an i-folio and a traditional portfolio is that I have the opportunity to review the documents at my convenience either before the candidate arrives or after they leave. I rarely make a hiring decision before I have meet all the candidates. Having digital portfolios available would allow me and the committee to review the candidates before making a final decision." Traditional portfolios "rarely are left behind after the interview and are never

dropped off before the interview" this makes their "impact very limiting." One principal commented, "each school climate is so different that it is almost impossible to select a candidate who will fit that is why I think it is more and more important to have actual excerpts of actual teaching experiences . . . to see how they communicate with students and how they convey the content."

The principals expressed that some of their peers may lack the necessary computer skills to navigate the i-folios or even the computer interests to attempt to look at the site. However, they emphasized that as older principals retire they will be replaced by more "computer-talented successors". They believed that through the viewing of i-folios it would be "easier to recognize a potential candidate's strengths and weaknesses without relying on the personal interview. However, principals were concerned that technology problems, mainly not having the correct software or platform, could possibly impede them from reviewing electronic portfolios. One principal said that electronic portfolios were " . . . very, very powerful and allowed them (teacher candidates) to show more . . ." While another expounded, "Just actually being able to see if someone can teach and you can see a lot in the short amount of time in the video clips . . . would allow an administrator to see if the person can actually present a lesson correctly" (December 9, 2002, personal interview).

The senior methods social studies professor commented, " Students were very prepared to speak about reasons for their portfolio organization. . . . it appeared that they had reflected on the importance of each element they included in their portfolio. Because they could include various types of media, such as video, on-line lesson plans, and samples of children's work, the i-folios format provided context for their thinking. This type of folio supports thinking democratically because students were able to prepare and discuss multiple

types of artifacts that represented their individual philosophy and abilities as a teacher" (January 3, 2003, personal interview).

At the same time, preservice teachers saw the benefits/weaknesses of using an electronic format not only for one semester, but also throughout their professional career. Many of the students believed that the important learning was not in making the electronic portfolio but in the parts. They valued each of the component parts in most instances more than the final product. Each student learned of the communicative value of posting information to the web. Most of the students identified that ". . . the most valuable contribution of the electronic portfolio experience was learning to create web pages." They believed that it would be a great way to communicate with parents, post lessons for parents to work with their children, and to post homework assignments.

During a conversation with the assistant superintendent of the local school district to discuss the permission slips needed to be sent home for videotaping, he volunteered the fact that pre-service teachers would now be able to submit their applications and resumes online. After he heard an explanation of the electronic portfolio process, he was enthusiastic and receptive, stating that students could now submit their portfolio web addresses so that principals could view this document before calling them for employment interviews. He admitted being in on interviews in the past where pre-service teachers came in the room with two large portfolio binders and principals or the interview committees "not having the time or tenacity to wade through all the portfolio items" (December 2, 2002, personal interview).

In addition to being an asset to pre-service teachers in securing a position as a teacher, these portfolios were helpful also to faculty responsible for determining strengths and areas for growth, providing direct evidence of what preservice teachers know and can

do. (James & Cleaf, 1990). One principal in the follow-up oral interview noted that electronic portfolios enabled her to actually see the students teaching in the video clip – a "definite advantage" confirming the study done by Bartlett (2001) who noted videos as something that could never be duplicated in a traditional portfolio.

References

Barrett, H. (2001). *Electronic teaching portfolios.* Retrieved November 23, 2001 from http://electronicportfolios.com/portflios/site99. html

Bartlett, A. (2001). Preparing preservice teachers to implement performance assessment and technology through electronic portfolios. *Action in Teacher Education, 24,* 90-97.

Bird, T. (1990). The schoolteacher's portfolio: An essay on possibilities. In J. Millman & L. Darling-Hammond (Eds.), *The new handbook of teacher evaluation: Assessing elementary and secondary school teachers.* Newbury, CT: Sage.

Bryde, B., Mahler, J., Murray-Ward, M., Gathercoal, P., & Bartell, C. (2001, March). *Project MAGNETIC CONNECTIONS: Infusing technology into California Lutheran University's preservice teacher preparation program.* Paper presented at the Annual meeting of the American Association of Colleges for Teacher Education. Dallas, TX.

Bull, K., Montgomery, D, Overton, R., & Kimball, S. (1999, March). *Developing collaborative electronic portfolios for preservice teachers in computer mediated learning.* Paper presented at the Rural Special Education for the new Millennium Conference Proceeding of the American Council on Rural Special Education. Albuquerque, NM.

Corbett-Perez, S., & Dorman, S. M. (1999). Electronic portfolios enhance health instruction. *Journal of School Health, 69,* 247-251.

Freiberg, H. J. (1995). Promoting reflective practice. In G. A. Slick (Ed.), *Emerging trends in teacher preparation: The future of field experiences.* Thousand Oaks, CA: Corwin.

James, A., & Cleaf, C. (1990). Portfolios for preservice teachers. *Kappa Delta Pi Record*, 43-45.

King, B. (1990). *Thinking about linking portfolios with assessment center exercises: Example from the teacher assessment project.* Stanford: Teacher Assessment Project (TAP), Stanford University.

Kivalchick, A. Milman, N. B., & Elizabeth, M. (1998). *Instructional strategies for integrating technology: Electronic journals and technology portfolios as facilitators for self-efficacy and reflection in preservice teachers.* (ERIC Document Reproduction Service: ED421115)

McKinney, M. (1998). Preservice teachers' electronic portfolios: Integrating technology, self-assessment, and reflection. *Teacher Education Quarterly, 25*, 85-103.

Powers, D., Thomson, S., & Buckner, K. (2001). Electronic portfolios. In A. Bullock & P. Hawk (Eds.) *Developing a Teaching Portfolio: A guide for preservice and practicing teachers*. Upper Saddle River, NJ: Merrill Prentice Hall.

Richards, R. (1998). Infusing technology and literacy into the undergraduate teacher education curriculum through the use of electronic portfolios. *T.H.E. Journal, 25 (9)*, 46-50.

Shulman, L. (1998). Teacher portfolios: A theoretical activity. In N. Lyons (Ed.), *With portfolio in hand: Validating the new teacher professionalism* (pp. 23-38). New York: Teachers College.

Tabachnick, B. R., & Zeichner, K. (Eds.) (1991). *Issues and practices in inquiry-oriented teacher education.* New York: Falmer.

Tierney, D. (1994, April). *Teacher portfolios: Would an assessment by any other name smell as sweet?* Paper presented at the annual meeting of the American Education Research Association, New Orleans, LA.

Tuttle, H. G. (1997). Electronic portfolios tell a personal story. *Multimedia Schools*, 32-37.

Wolf, K. (1991). The schoolteacher's portfolio: Issues in design, implementation, and evaluation. *Phi Delta Kappan, 73,* 129-136.

Wolf, K. (1992). Portfolios assessment: Sampling student work. *Educational Leadership, 46(7),* 35-39.

Weidmer, T. (1998). Digital portfolios: Capturing and demonstrating skills and levels of Performance. *Phi Delta Kappan, 79,* 586-589.

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